

Intel® 810 Embedded Client Reference Design

Scalable Platform with Integrated Flat Panel Display

Product Highlights

- Validated reference design for Networked Embedded Clients. Applications include: Web-connected kiosks, point-of-sale terminals, ATM machines, gaming terminals and Internet terminals.
- No cost, downloadable reference design includes schematics, board layout and chassis, and thermal design details.
- Fanless thermal solution optimized for 20W TDP @ 50°C ambient; increased reliability and ideal for high temperature environments.
- Liquid-resistant design suitable for commercial, outdoor and public usage environments where liquid condensation and contamination may be present.
- Windows* software development eco-system for fast application development and deployment using widely available software tools.
- Scalable performance based on Intel® Pentium® III and Celeron™ processors.



Reference board layout:

- Board size optimized for placement behind 10" flat panel
- 2-board configuration for flexible architecture configurations

Reference design documentation:

- Chassis concept with vertical orientation minimizes footprint and enables a fanless thermal design. Chassis supports a touchscreen interface.

Product Specifications

- Intel® 810 Chipset with integrated 3D graphics controller
- Flat panel display support (TFT/DSTN)
- 32 MBytes SDRAM expandable to 256 MBytes (2 sockets)
- On-Board 10/100 Mbps Ethernet LAN using Intel® 82559ER LAN Controller
- Flexible I/O:
 - 2 USB Ports, 2 Serial Ports, 1 Parallel Port
 - PCI Mezzanine Card (PMC) for system expansion
 - Optional PCMCIA Card Cage for additional flexibility

Benefits for Developers

Networked Embedded Clients provide data collection and communications to the enterprise in a diverse range of commercial and public environments from ATM machines to gaming terminals.

Development of innovative products for this segment requires a robust, high-performance design that can support the rapid evolution of value-added software. The Intel 810 Embedded Client Reference Design provides desktop-equivalent performance in a robust embedded design optimized for harsh environments. The reference design includes schematics, board layouts and a detailed chassis and thermal design. It is available for download to developers at no cost at:

developer.intel.com/platforms/applied/trans/index.htm

Speeding Time-To-Market

Intel understands that internal product development and validation can involve a substantial commitment of resources and time. As such, the use of Intel building

blocks, validated with the Intel 810 Embedded Client Reference Design, can simplify the development cycle and provide developers with the quickest route to product delivery.

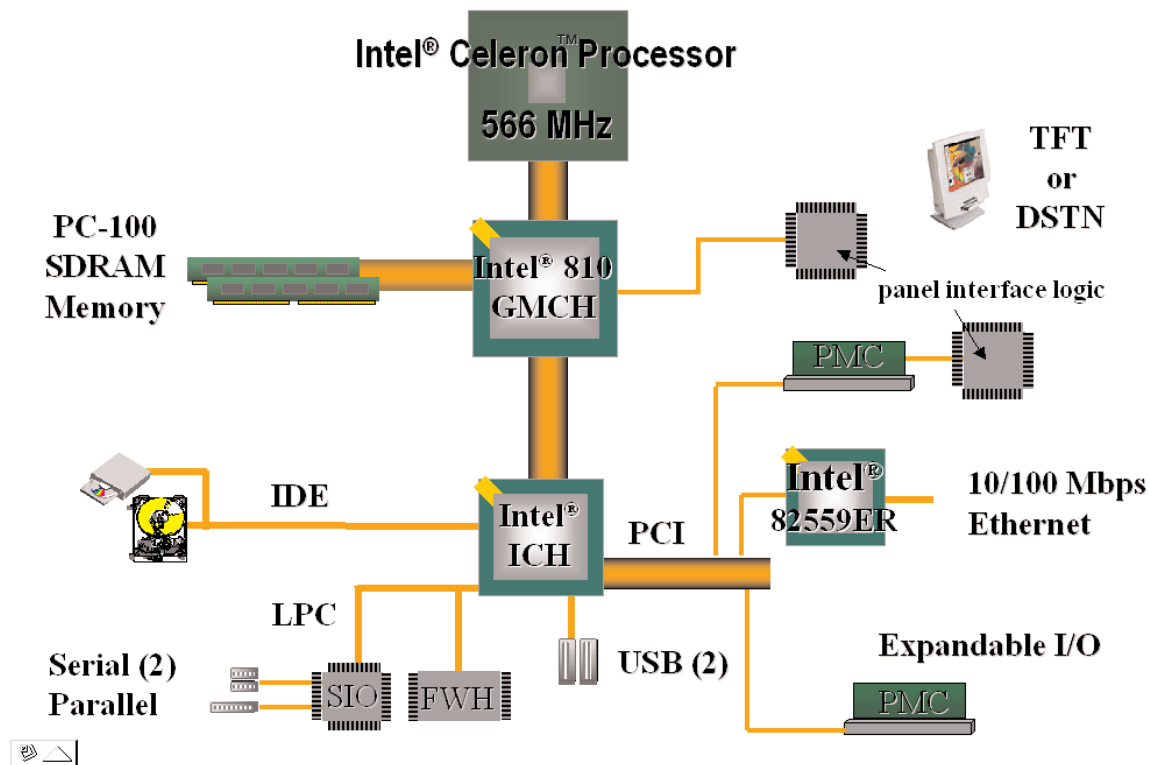
Benefits to Developers At-a-Glance

Time-to-market	Validated [†] embedded Intel® Architecture reference design integrates one platform to support multiple design applications: kiosks, ATMs, point-of-sale terminals
Open architecture	Windows software development environment supports rapid and cost-effective development of value-added software solutions, including compelling user interfaces, rich content and Web-based management solutions
Scalability	One design supports Intel® Pentium® III and Celeron™ processors for scalable performance
Price/performance	Cost-effective embedded design features desktop-equivalent performance

Features and Benefits At-a-Glance

Feature	Benefit
Convection cooling (no fan required)	Increased reliability and reduced noise
Rating to 50° C ambient temperature	Suitable for high-temperature environments, including outdoor use
Liquid-resistant design	Suitable for commercial, outdoor and public usage environments where liquid condensation and contamination may be present; easy to clean
Small footprint (Enclosure Size 11" W x 15" H x 5.5" D)	Ideal for space-constrained environments
Windows software development eco-system	Fast application development and deployment using widely available software tools
Embedded components with desktop equivalent performance (CPU, memory, hard drive)	Bill-of-materials optimizes cost/performance; provides headroom for software differentiation and rich content
Networked embedded client	Enables data collection and communications to the enterprise; Web-based management
Cost-effective bent metal and extruded thermal component	Suitable for both small and medium manufacturing volumes

[†]Validation of the reference design was completed utilizing an internal Intel software suite that tested all the sub-systems on the board including hardware and interfaces. Performance benchmarking was done using Wintune*.



Block Diagram, Intel® 810 Embedded Client Reference Design

Key Platform Building Blocks Include:

- High performance processor (Intel® Pentium® III or Celeron™ processor)
- Intel 810 chipset with integrated graphics controller
- PC-100 SDRAM memory: 32 Mbytes - expandable to 256 Mbytes (also supports PC-133 memory)
- 2 Serial ports and 1 parallel port
- 2 USB ports
- LAN controller
- 1 PMC card for flat panel interface logic options (either TFT or DSTN)
- 1 PMC card as an I/O card for other expansion

Intel Solutions Now Available

The Intel 810 Embedded Client Reference Design is supported by independent hardware vendors and contract manufacturers who meet Intel's strict criteria for quality assurance, design capability, tools support and manufacturing capacity.

These companies have established a significant presence in the electronic manufacturing services embedded market segments, including retail and financial transaction terminal products, industrial PCs, communications systems and more. They deliver Intel Architecture solutions including appropriate BIOS software, drivers and connectivity support.

Intel Access

Intel Developer's Site	developer.intel.com
Embedded Intel Architecture Transaction Terminals	developer.intel.com/platforms/applied/trans/index.htm
Embedded Intel Architecture in Communications	developer.intel.com/platforms/applied/eicomm/
Embedded Intel Architecture Independent Vendor Support	developer.intel.com/design/intarch/emsp/index.htm developer.intel.com/platforms/applied/acpp/index.htm
Other Intel Support:	developer.intel.com/design/litcentr
Intel Literature Center	(800) 548-4725 7 a.m. to 7 p.m. CST (U.S. and Canada)
International locations please contact your local sales office.	
General Information Hotline	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST

Information in this document is provided in connection with Intel products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel products are not intended for use in medical, life saving, or life sustaining applications. Intel may make changes to specifications and product descriptions at any time, without notice.

Intel, Celeron and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in other countries.

*Other names and brands may be claimed as the property of others.



For more information, visit the Intel Web site at: developer.intel.com

UNITED STATES AND CANADA
Intel Corporation
Robert Noyce Bldg.
2200 Mission College Blvd.
P.O. Box 58119
Santa Clara, CA 95052-8119
USA

EUROPE
Intel Corporation (UK) Ltd.
Pipers Way
Swindon
Wiltshire SN3 1RJ
UK

ASIA-PACIFIC
Intel Semiconductor Ltd.
32/F Two Pacific Place
88 Queensway, Central
Hong Kong, SAR

JAPAN
Intel Kabushiki Kaisha
P.O. Box 115 Tsukuba-gakuen
5-6 Tokodai, Tsukuba-shi
Ibaraki-ken 305
Japan

SOUTH AMERICA
Intel Semicondutores do Brasil
Rue Florida, 1703-2 and CJ22
CEP 04565-001 Sao Paulo-SP
Brazil